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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,543	02/27/2002	Rene Gallezot	FR920010006US1	7695

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EXAMINER	
TORRES, JOSEPH D	

ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 12/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/084,543	GALLEZOT ET AL.	
	Examiner	Art Unit	
	Joseph D. Torres	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 September 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,12,13 and 15-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,12,13 and 15-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 02/14/2005 with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

Note: The Applicant's amendment filed 02/14/2005 necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Claim Rejections - 35 USC § 112

2. Claims 1-9, 12, 13, 15-19 and 16-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "said displaced d-bit wide FCS" in line 16. There is insufficient antecedent basis for this limitation in the claim.

Claim 16 recites the limitation "said cyclic group" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claim 16 recites the limitation "said d-bit wide FCS" in line 9. There is insufficient antecedent basis for this limitation in the claim.

Claim 19 recites the limitation "the N-bit chuck" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 6-9, 12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Hyodo; Ryuji et al. (US 5282215 A, hereafter referred to as Hyodo).

35 U.S.C. 102(b) rejection of claim 1.

Hyodo teaches picking a new N-bit chunk of data bits from said binary string of data bits (col. 7, lines 6-24 in Hyodo teach that N=m bits of data are selected for generating CRC data C_n); dividing, modulo said generator polynomial G(X), said new N=m-bit chunk of data bits thus, getting a d-bit wide division result (Equation 2 in col. 7 of Hyodo teaches that C_n is generated by dividing the N=m-bit chunk of data bits by the generator polynomial G, i.e., C_n = Remainder[$(a_nX^{m-1} + \ldots + a_{n+m-2}X^1 + a_{n+m+1}X^0)/G$] where $a_nX^{m-1} + \ldots + a_{n+m-2}X^1 + a_{n+m+1}X^0$ is the N=m-bit chunk of data bits; Equation 9 in col. 8 and step [1] in lines 31-32 of col. 7 in Hyodo teach that a CRC operation is then performed on C_nX to produce Remainder[C_nX /G] = Remainder[(Remainder[$(a_nX^{m-1} + \ldots + a_{n+m-2}X^1 + a_{n+m+1}X^0)/G$] X)/G]; hence the N=m-bit chunk of data bits are divided by the generator polynomial G to generate the d-bit wide division result Remainder[C_nX /G]); generating a value for FCS displaced within said cyclic group of d-bit wide binary vectors (-Remainder[a_nX^m/G] + a_n +mX^0 in Equation 9 in col. 8 in Hyodo is a value for FCS

displaced within said cyclic group of d-bit wide binary vectors: Note: since the group is cyclic Remainder[C_nX /G] must be an element of the cyclic group and since C_{n+1} is also an element of the cyclic group, -Remainder[a_nX^m/G] + a_n +mX^0 must also be an element of the cyclic group; Note: Cyclic codes are closed under addition and multiplication by scalars, and furthermore division by G produces an element of the cyclic code); adding, modulo two, said d-bit wide division result and said displaced d-bit wide FCS so generated (Equation 9 in Column 8 of Hyod teaches that said d-bit wide division result Remainder[C_nX /G] = Remainder[(Remainder[(a_nX^{m-1} + ... + $a_{n+m-2}X^1$ + $a_{n+m+1}X^0$)/G] X)/G] is added to said displaced d-bit wide FCS, -Remainder[a_nX^m/G] + a_n +mX^0); updating said d-bit wide FCS (C_{n+1} is an updated d-bit wide FCS value); checking if more data bits of said binary string of data bits are left for calculation: if yes, repeating all recited steps; if not, exiting the method after checking step; thereby, getting a final result of said CRC calculation in said d-bit wide FCS (Figure 11 in Hyodo teaches that the algorithm for generating C_{n+1} is repeated until al input data is exhausted at which point C_{out} is outputted).

35 U.S.C. 102(b) rejection of claim 2.

Figure 11 in Hyodo teaches that the algorithm for generating C_{n+1} is repeated until al input data is exhausted at which point C_{out} is outputted.

35 U.S.C. 102(b) rejection of claim 3.

See claim 13 in Hyodo.

35 U.S.C. 102(b) rejection of claims 6 and 7.

Col. 8, lines 5-20 in Hyodo.

35 U.S.C. 102(b) rejection of claim 8.

See Abstract in Hyodo. Note: one of ordinary skill in the art at the time the invention was made would have recognized that ATM cells are basic components of a messaging frame in a communication network.

35 U.S.C. 102(b) rejection of claim 9.

Claim 9 recites intended use claims and the teaching in Hyodo is inherently capable of being used in a networking environment for a computing system. In re Schreiber, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997).

35 U.S.C. 102(b) rejection of claim 12.

Figure 11 is a CRC processor capable of carrying out the instructions in col. 8, lines 29-35 of Hyodo.

35 U.S.C. 102(b) rejection of claim 13.

See Figure 15 on Hyodo.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 4 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hyodo; Ryuji et al. (US 5282215 A, hereafter referred to as Hyodo) in view of Kangas; Mauri (US 5355412 A).

35 U.S.C. 103(a) rejection of claim 4.

Hyodo substantially teaches the claimed invention described in claims 1-3 (as rejected above).

However Hyodo does not explicitly teach the specific use of said dividing step is omitted, if value of said N-bit is equal to said degree d.

Kangas, in an analogous art, teaches dividing step is omitted, if value of said N-bit is equal to said degree d (Figure 1 in Kangas teaches that when the length d of CRC 14 is

equal to the length N of CRC-identifier 16, CRC 14 is added to CRC-identifier 16 without division).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hyodo with the teachings of Kangas by including use of said dividing step is omitted, if value of said N-bit is equal to said degree d. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of said dividing step is omitted, if value of said N-bit is equal to said degree d would have provided a means for secure messaging (Figure 1 in Kangas).

35 U.S.C. 103(a) rejection of claims 16-18.

Hyodo teaches picking a new N-bit chunk of data bits from said binary string of data bits (col. 7, lines 6-24 in Hyodo teach that N=m bits of data are selected for generating CRC data C_n); dividing, modulo said generator polynomial G(X), said new N=m-bit chunk of data bits thus, getting a d-bit wide division result (Equation 2 in col. 7 of Hyodo teaches that C_n is generated by dividing the N=m-bit chunk of data bits by the generator polynomial G, i.e., C_n = Remainder[$(a_nX^{m-1} + \ldots + a_{n+m-2}X^1 + a_{n+m+1}X^0)/G$] where $a_nX^{m-1} + \ldots + a_{n+m-2}X^1 + a_{n+m+1}X^0$ is the N=m-bit chunk of data bits; Equation 9 in col. 8 and step [1] in lines 31-32 of col. 7 in Hyodo teach that a CRC operation is then performed on C_nX to produce Remainder[C_nX /G] = Remainder[(Remainder[$(a_nX^{m-1} + \ldots + a_{n+m-2}X^1 + a_{n+m+1}X^0)$/G] X)/G]; hence the N=m-bit chunk of data bits are divided by the generator polynomial G to generate the d-bit wide division result Remainder[C_nX /G]); generating

a value for FCS displaced within said cyclic group of d-bit wide binary vectors (-Remainder[a_nX^m/G] + a_n +mX^0 in Equation 9 in col. 8 in Hyodo is a value for FCS displaced within said cyclic group of d-bit wide binary vectors: Note: since the group is cyclic Remainder[C_nX /G] must be an element of the cyclic group and since C_{n+1} is also an element of the cyclic group, -Remainder[a_nX^m/G] + a_n +mX^0 must also be an element of the cyclic group; Note: Cyclic codes are closed under addition and multiplication by scalars, and furthermore division by G produces an element of the cyclic code); adding, modulo two, said d-bit wide division result and said displaced d-bit wide FCS so generated (Equation 9 in Column 8 of Hyod teaches that said d-bit wide division result Remainder[C_nX /G] = Remainder[(Remainder[(a_nX^{m-1} + … + $a_{n+m-2}X^1$ + $a_{n+m+1}X^0$)/G] X)/G] is added to said displaced d-bit wide FCS, -Remainder[a_nX^m/G] + a_n +mX^0); updating said d-bit wide FCS (C_{n+1} is an updated d-bit wide FCS value); checking if more data bits of said binary string of data bits are left for calculation: if yes, repeating all recited steps; if not, exiting the method after checking step; thereby, getting a final result of said CRC calculation in said d-bit wide FCS (Figure 11 in Hyodo teaches that the algorithm for generating C_{n+1} is repeated until al input data is exhausted at which point C_{out} is outputted).

However Hyodo does not explicitly teach the specific use of said dividing step is omitted, if value of said N-bit is equal to said degree d.

Kangas, in an analogous art, teaches dividing step is omitted, if value of said N-bit is equal to said degree d (Figure 1 in Kangas teaches that when the length d of CRC 14 is

equal to the length N of CRC-identifier 16, CRC 14 is added to CRC-identifier 16 without division).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hyodo with the teachings of Kangas by including use of said dividing step is omitted, if value of said N-bit is equal to said degree d. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of said dividing step is omitted, if value of said N-bit is equal to said degree d would have provided a means for secure messaging (Figure 1 in Kangas).

35 U.S.C. 103(a) rejection of claim 19.

Equation 9 in Column 8 of Hyod teaches that said d-bit wide division result Remainder[C_nX /G] = Remainder[(Remainder[(a_nX^{m-1} + ... + $a_{n+m-2}X^1$ + $a_{n+m+1}X^0$)/G] X)/G].

That is the current FCS C_n is multiplied by displacement X.

5. Claims 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hyodo; Ryuji et al. (US 5282215 A, hereafter referred to as Hyodo) and Kangas; Mauri (US 5355412 A) in view of Freeman; Richard B. et al. (US 3678469 A, hereafter referred to as Freeman).

35 U.S.C. 103(a) rejection of claim 5.

Hyodo and Kangas substantially teaches the claimed invention described in claims 1-4 (as rejected above).

However Hyodo and Kangas does not explicitly teach the specific use of padding said N-bit chunk of data with enough leading zeros to match said d-bit wide FCS.

Freeman, in an analogous art, teaches use of padding said N-bit chunk of data with enough leading zeros to match said d-bit wide FCS (see New Character 34 in Figure 2a).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hyodo and Kangas with the teachings of Freeman by including use of padding said N-bit chunk of data with enough leading zeros to match said d-bit wide FCS. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of padding said N-bit chunk of data with enough leading zeros to match said d-bit wide FCS would have provided data of the appropriate length for processing (see New Character 34 in Figure 2a).

6. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hyodo; Ryuji et al. (US 5282215 A, hereafter referred to as Hyodo).

35 U.S.C. 103(a) rejection of claim 15.

Hyodo substantially teaches the claimed invention described in claim 1-2 (as rejected above).

However Hyodo does not explicitly teach the specific use of computer software.

The Examiner asserts that one of ordinary skill in the art at the time the invention was made would have recognized that computer software offers a flexible scalable means for implementing an error correction algorithm.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Hyodo by including use of computer software. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of computer software would have provided a flexible scalable means for implementing an error correction algorithm.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (571) 272-3829. The examiner can normally be reached on M-F 8-5.
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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